

REMARKS

Claim Rejections

Claims 1-6 are rejected under 35 U.S.C. § 102(b) as being anticipated by Wyler et al. (U.S. 6,401,807). Claims 1, 3 and 7 are rejected under 35 U.S.C. §102(a) as being anticipated by Lee (U.S. 6,633,484).

Drawings

It is noted that no Patent Drawing Review (Form PTO-948) was received with the outstanding Office Action. Thus, Applicant must assume that the drawings are acceptable as filed.

Abstract of the Disclosure

Applicant is submitting is herewith a substitute Abstract of the Disclosure for that originally filed with this application to more clearly describe the claimed invention. Entry of the substitute Abstract of the Disclosure is respectfully requested.

Amendments to Specification

Applicant has amended the specification as noted above to correct the reference number for the integrated circuit. No "new matter" has been added to the original disclosure by the foregoing amendments to the specification.

New Claims

By this Amendment, Applicant has canceled claims 1-7 and has added new claims 8-13 to this application. It is believed that the new claims specifically set forth each element of Applicant's invention in full compliance with 35 U.S.C. § 112, and define subject matter that is patentably distinguishable over the cited prior art, taken individually or in combination.

The new claims are directed toward a heat sink cooling device for an integrated circuit comprising: a base (11); and a plurality of heat zones (13, 14) having: at least one first heat zone (13) having a plurality of first heat zone fins (12),

the plurality of first heat zone fins having a plurality of first heat zone vertical plates (121) and a plurality of first heat zone horizontal plates (122), each first heat zone vertical plate is located between two first heat zone horizontal plates of the plurality of first heat zone horizontal plates, each two first heat zone horizontal plates including a first top horizontal plate and a first bottom horizontal plate, each first bottom horizontal plate is connected to the base and each first top horizontal plate is spaced apart from the base; and at least one second heat zone (14) having a plurality of second heat zone fins (12), the plurality of second heat zone fins having a plurality of second heat zone vertical plates (121) and a plurality of second heat zone horizontal plates (122), each second heat zone vertical plate is located between two second heat zone horizontal plates of the plurality of second heat zone horizontal plates, each two second heat zone horizontal plates including a second top horizontal plate and a second bottom horizontal plate, each second bottom horizontal plate is connected to the base and each second top horizontal plate is spaced apart from the base, wherein each of the plurality of first heat zone vertical plates have a height that is higher than a height of each of the plurality of second heat zone vertical plates.

Other embodiments of the present invention include: the plurality of heat zones includes one first heat zone and one second heat zone; the plurality of heat zones includes one first heat zone and two second heat zones; the plurality of heat zones includes two heat zones and one second heat zone; each first top horizontal plate and each second top horizontal plate includes a rectangular hole; the plurality of heat zones are formed by bending a metal plate.

The primary reference to Wyler et al. discloses a folded fin heat sink including a folded fin (10) having ridges (12), grooves (14), openings (16), and a depressed region (18) extending across all of the fins.

Wyler et al. do not teach the plurality of heat zones includes one first heat zone and one second heat zone; the plurality of heat zones includes one first heat zone and two second heat zones; the plurality of heat zones includes two heat zones and one second heat zone; each first top horizontal plate and each second top horizontal plate includes a rectangular hole; nor do Wyler et al. teach the plurality of heat zones are formed by bending a metal plate.

It is axiomatic in U.S. patent law that, in order for a reference to anticipate a claimed structure, it must clearly disclose each and every feature of the claimed structure. Applicant submits that it is abundantly clear, as discussed above, that Wyler et al. do not disclose each and every feature of Applicant's new claims and, therefore, could not possibly anticipate these claims under 35 U.S.C. § 102. Absent a specific showing of these features, Wyler et al. cannot be said to anticipate any of Applicant's new claims under 35 U.S.C. § 102.

The secondary reference to Lee et al. discloses heat-dissipating devices including a first conductive ring (220) and a second conductive ring (290). The first conductive ring includes alternating shadow folds (280, 285) and an array of radial extending fins (250).

Lee et al. do not teach the plurality of first heat zone fins having a plurality of first heat zone vertical plates and a plurality of first heat zone horizontal plates; each first heat zone vertical plate is located between two first heat zone horizontal plates of the plurality of first heat zone horizontal plates; each two first heat zone horizontal plates including a first top horizontal plate and a first bottom horizontal plate; each first bottom horizontal plate is connected to the base and each first top horizontal plate is spaced apart from the base; the plurality of second heat zone fins having a plurality of second heat zone vertical plates and a plurality of second heat zone horizontal plates; each second heat zone vertical plate is located between two second heat zone horizontal plates of the plurality of second heat zone horizontal plates; each two second heat zone horizontal plates including a second top horizontal plate and a second bottom horizontal plate; each second bottom horizontal plate is connected to the base and each second top horizontal plate is spaced apart from the base; the plurality of heat zones includes one first heat zone and one second heat zone; the plurality of heat zones includes one first heat zone and two second heat zones; the plurality of heat zones includes two heat zones and one second heat zone; each first top horizontal plate and each second top horizontal plate includes a rectangular hole; nor do Lee et al. teach the plurality of heat zones are formed by bending a metal plate.

It is axiomatic in U.S. patent law that, in order for a reference to anticipate a claimed structure, it must clearly disclose each and every feature of the claimed structure. Applicant submits that it is abundantly clear, as discussed above, that Lee et al. do not disclose each and every feature of Applicant's new claims and, therefore, could not possibly anticipate these claims under 35 U.S.C. § 102. Absent a specific showing of these features, Lee et al. cannot be said to anticipate any of Applicant's new claims under 35 U.S.C. § 102.

It is further submitted that neither Wyler et al. nor Lee et al. disclose, or suggest any modification of their specifically disclosed structures that would lead one having ordinary skill in the art to arrive at Applicant's claimed structure. Thus, it is not believed that either Wyler et al. or Lee et al. render obvious any of Applicant's new claims under 35 U.S.C. § 103.

Summary

In view of the foregoing amendments and remarks, Applicant submits that this application is now in condition for allowance and such action is respectfully requested. Should any points remain in issue, which the Examiner feels could best be resolved by either a personal or a telephone interview, it is urged that Applicant's local attorney be contacted at the exchange listed below.

Respectfully submitted,

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